OIPE IAP42
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PATENT & TRADEMARK OFFICE

FIG. 1, FIG. 3

a··· U-PHASE OUTPUT

b··· V-PHASE OUTPUT

c··· W-PHASE OUTPUT

d··· INVERTER CONTROL CIRCUIT

e··· OUTPUT VOLTAGE COMMAND SIGNAL

f··· PWM PULSE GENERATING CIRCUIT

g··· UP INITIAL SIGNAL

h··· UN INITIAL SIGNAL

i··· VP INITIAL SIGNAL

j··· VN INITIAL SIGNAL

k··· WP INITIAL SIGNAL

1··· WN INITIAL SIGNAL

m··· SIMULTANEOUS SWITCHING PREVENTION CIRCUIT

n··· UP GATE SIGNAL

o··· UN GATE SIGNAL

p··· VP GATE SIGNAL

q··· VN GATE SIGNAL

r··· WP GATE SIGNAL

s··· WN GATE SIGNAL

FIG. 5

a,b, c, d, e··· HIGH-POSSIBILITY SIMULTANEOUS-SWITCHING POINTS

FIG. 6

a··· UP INITIAL SIGNAL

b··· POST-TURNING-OFF Δt_1, GENERATING CIRCUIT

c··· POST-TURNING-ON Δt_2 GENERATING CIRCUIT

d··· SIMULTANEOUS SWITCHING PREVENTION LOGIC CIRCUIT

e··· DEAD TIME GENERATING CIRCUIT

f··· UP GATE SIGNAL

g··· UN GATE SIGNAL

h··· UN INITIAL SIGNAL

i··· VP INITIAL SIGNAL

j··· VP GATE SIGNAL

k··· VN GATE SIGNAL

l··· VN INITIAL SIGNAL

m··· WP INITIAL SIGNAL

n··· WP GATE SIGNAL

o··· WN GATE SIGNAL

p··· WN INITIAL SIGNAL

FIG. 8

A··· GATE DRIVE CIRCUIT

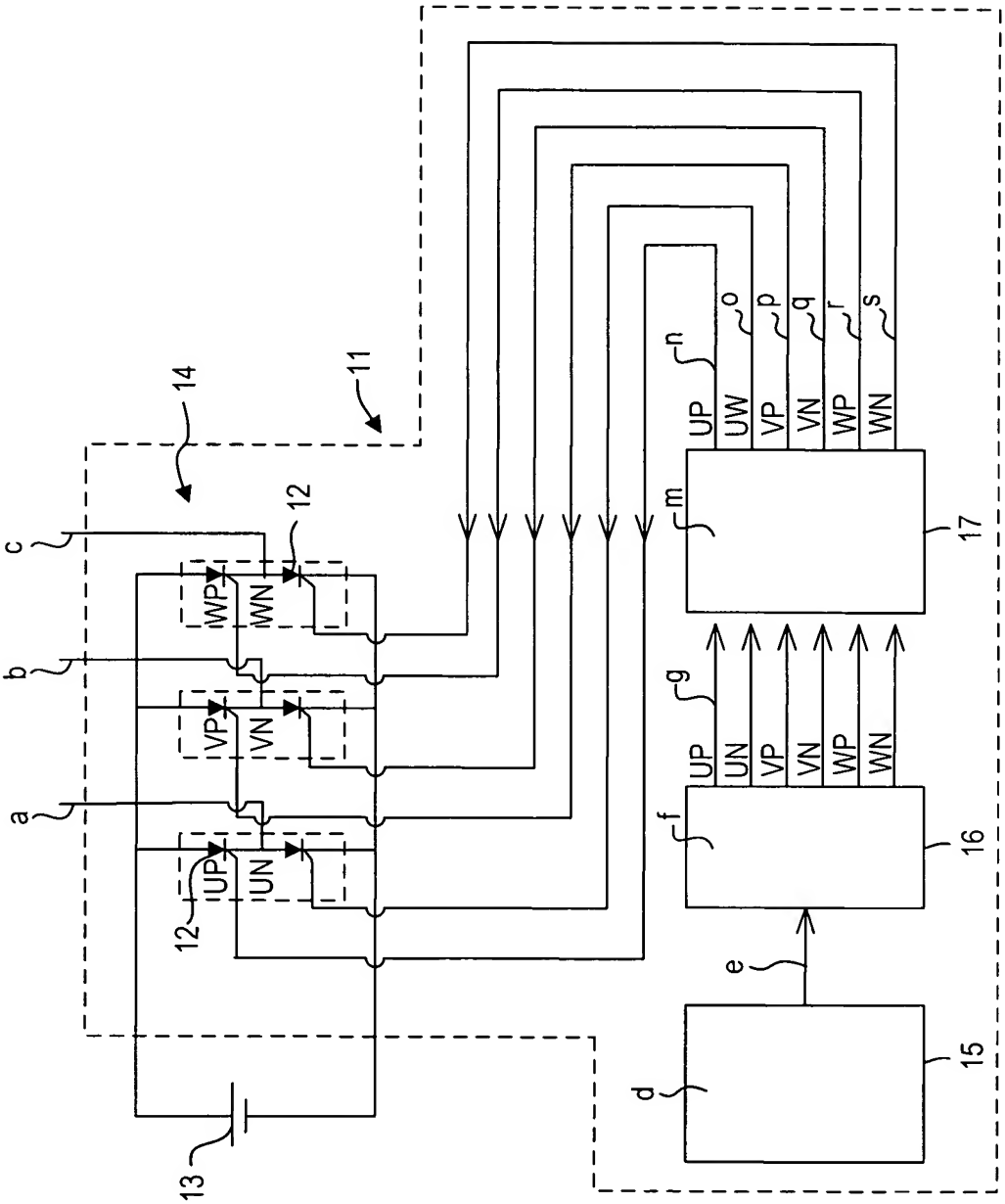
11
14
12
c
b
a
WP
WN
VP
VN
UP
UN
12
13
d
15
e
f
16
g
UP
UN
VP
VN
WP
WN
m
17
n
o
p
q
r
s
UP
UW
VP
VN
WP
WN

FIG. 1

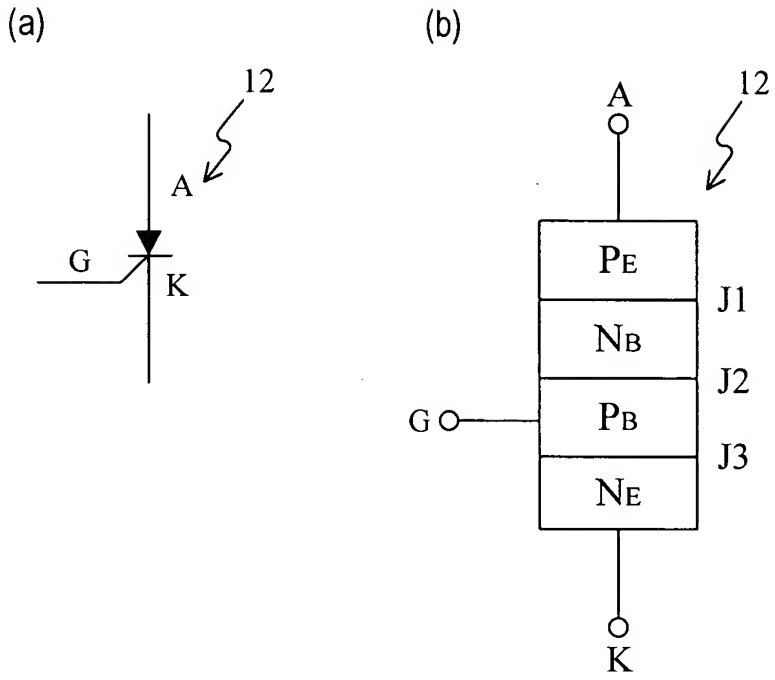

FIG. 2

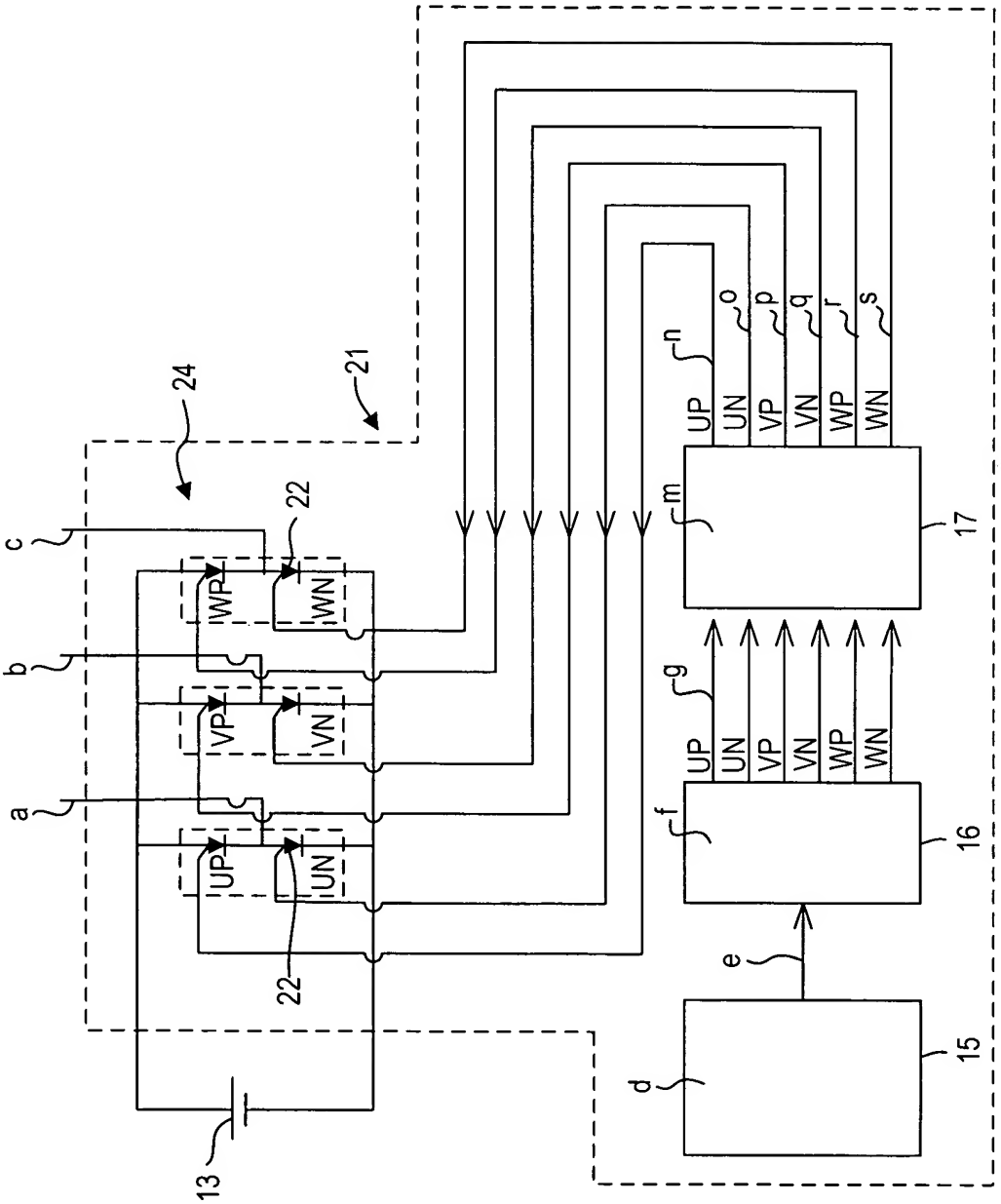
21
24
22
22
c
b
a
WP
WN
VP
VN
UP
UN
13
d
15
e
f
16
g
UP
UN
VP
VN
WP
WN
m
17
n
o
p
q
r
s
UP
UN
VP
VN
WP
WN

FIG. 3

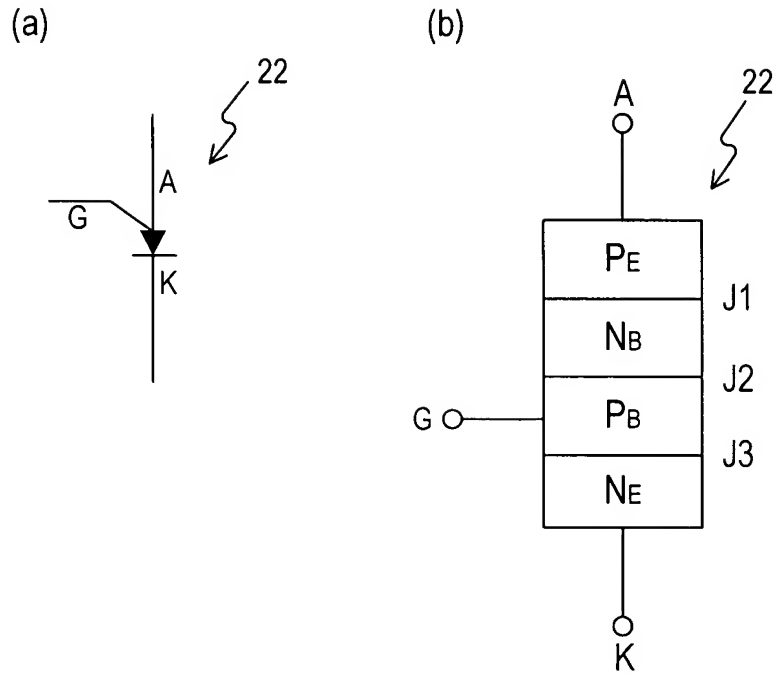

FIG. 4

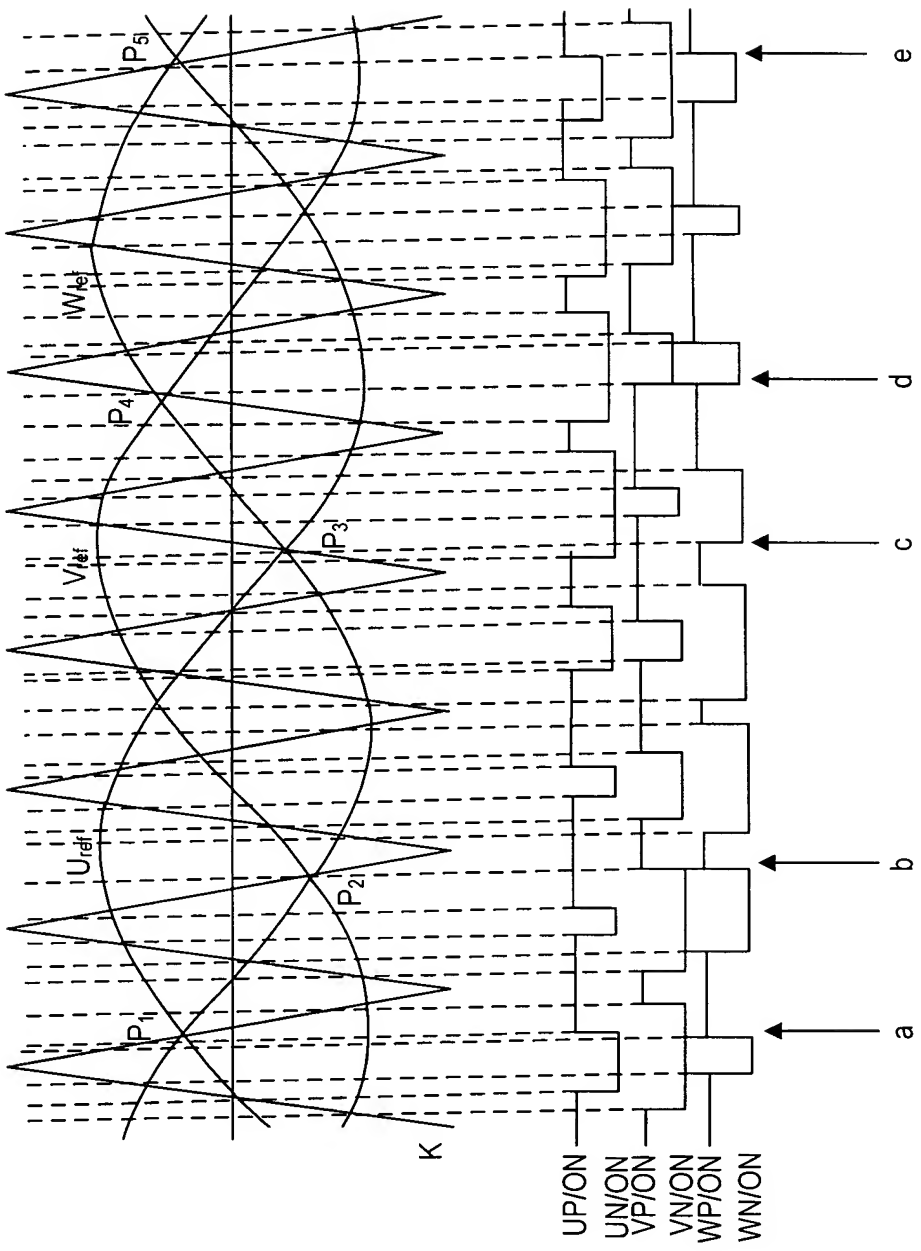
P_5
W_{ref}
P_4
V_{ref}
P_3
U_{ref}
P_2
P_1
K
UP/ON
UN/ON
VP/ON
VN/ON
WP/ON
WN/ON
a
b
c
d
e

FIG. 5

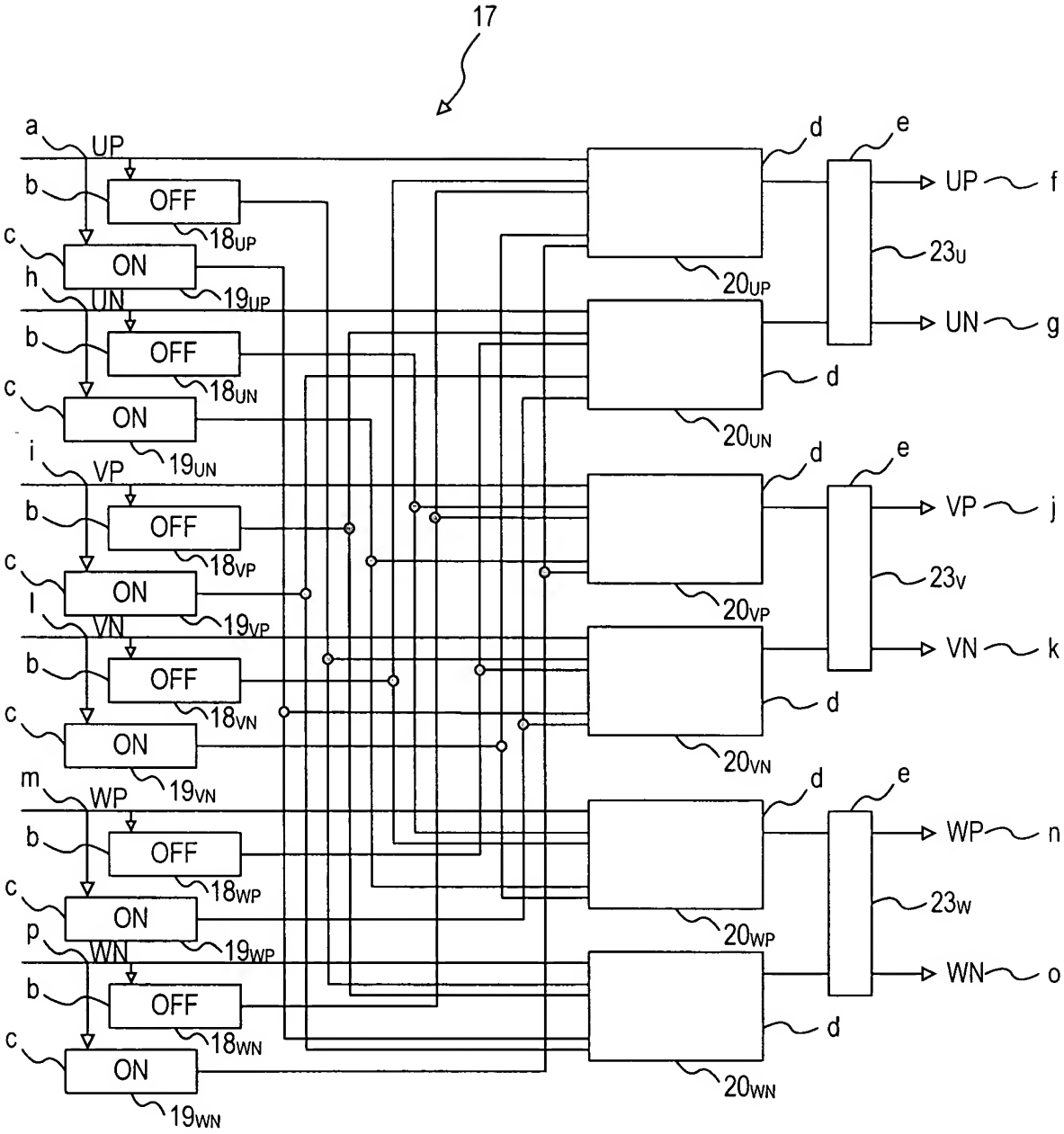
17
a
UP
b
OFF
18UP
c
ON
19UP
h
UN
b
OFF
18UN
c
ON
19UN
i
VP
b
OFF
18VP
c
ON
19VP
l
VN
b
OFF
18VN
c
ON
19VN
m
WP
b
OFF
18WP
c
ON
19WP
p
WN
b
OFF
18WN
c
ON
19WN
d
e
20UP
UP
f
23U
UN
g
20UN
20VP
VP
j
23V
VN
k
20VN
20WP
WP
n
23W
WN
o
20WN

FIG. 6

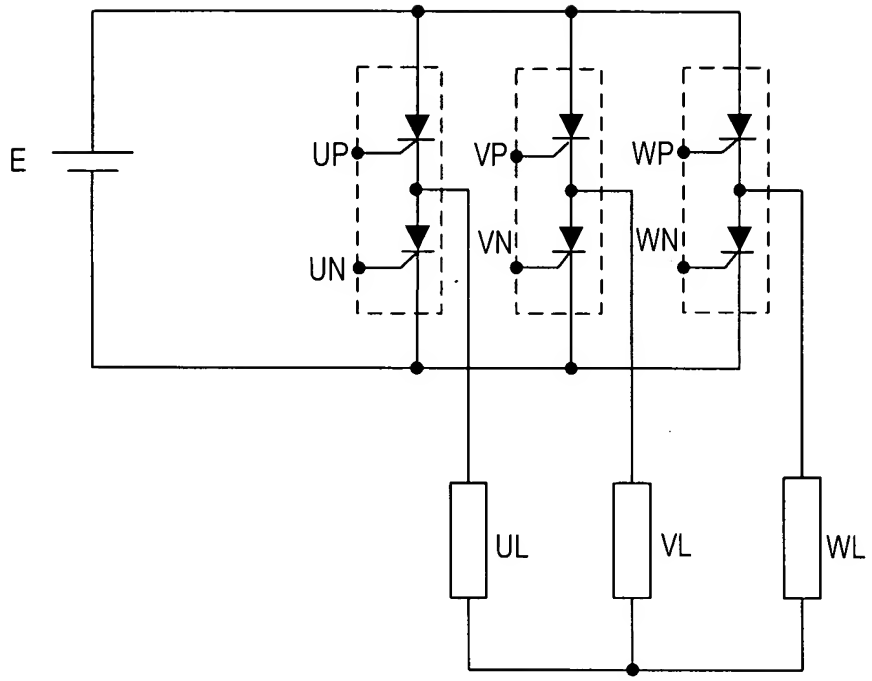

FIG. 7

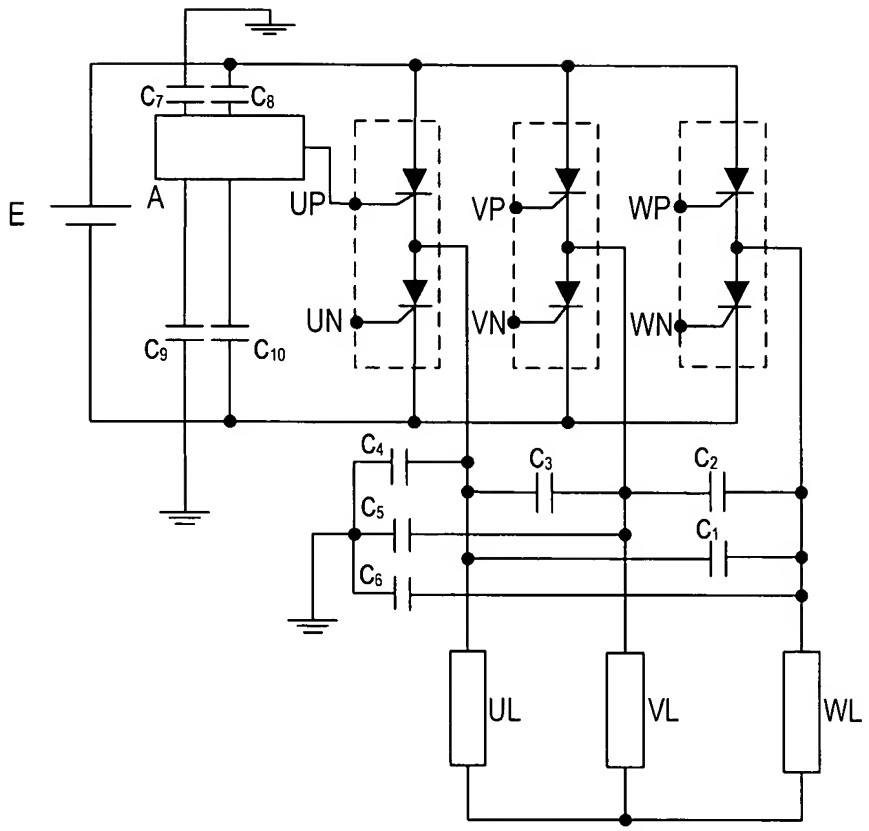

FIG. 8